

# Minimally Invasive Blood Analyte Sensor

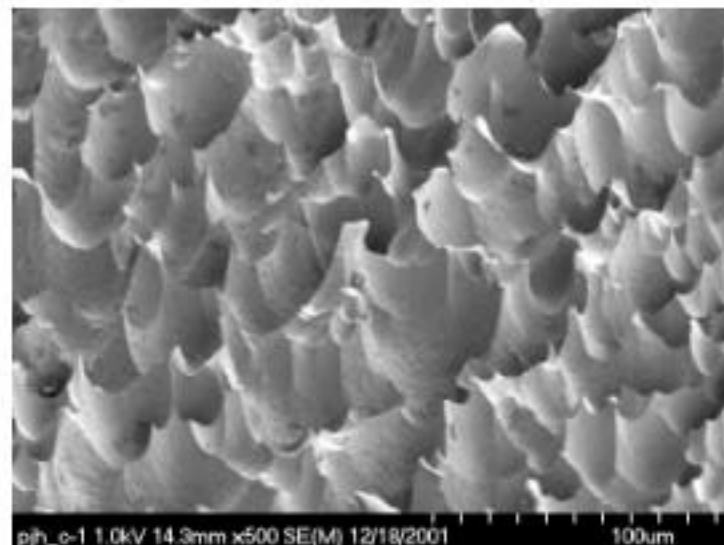
QUESTSTAR MEDICAL, INC.



## TECHNOLOGIES

Several technologies are involved in the design of the *QuestStar Medical* blood analyte sensor:

- ◆ Fiber optics with associated light sources and detectors.
- ◆ Atomic oxygen texturing of fiber tips to separate plasma from whole blood and provide enhanced micro-surfaces for chemical reactions.
- ◆ Plasma polymerization of fiber tip surfaces to covalently couple enzymes or ligands to amino or carboxyl functional groups.
- ◆ Enzyme chemistry with imbedded color reagents for colorimetric response to glucose and other analytes.
- ◆ Measurement methods using reflectance, precipitating colorimetry and/or fluorescence detection.



*Atomic Oxygen Texturing of Optical Fiber Tip (x500)*

## COMMERCIAL APPLICATIONS

- ◆ Blood glucose monitoring for point-of-care and home use.
- ◆ Measurements of other blood analytes, and DNA detection of biological, pollutant and other medical and non-medical agents.

## SOCIAL / ECONOMIC BENEFITS

- ◆ Significantly lower the cost of blood glucose monitoring and the testing of other analytes.
- ◆ Provide faster, easier, less painful, and low-cost glucose monitoring for people with diabetes in underserved world-wide markets.
- ◆ Bring DNA medical and non-medical diagnostics to a wider market.

## NASA APPLICATIONS

- ◆ There may be potential to use this new technology for low blood volume glucose monitoring